

Lichens from the Southern Alps, New Zealand: Records from Phipps Peak, The Two Thumbs, and the Tasman Valley¹

B. A. FINERAN² and C. W. DODGE³

THE TAXONOMY, ecology, and regional distribution of lichens in New Zealand are imperfectly known (Galloway, 1966, 1968a, 1968b; Martin, 1966, 1968). In surveying the scattered literature, Galloway (1966) found that very little work had been done on alpine lichens. In his account he lists 150 species collected between about 2,600 and 6,060 feet from three sites in the Humboldt mountains, Fiordland. Earlier, J. Scott Thomson is known to have collected lichens from peaks in Otago and elsewhere in the South Island (see Zahlbruckner, 1941). Philipson and Brownlie (1958) have also recorded several species from mountains in the environs of Cass, Canterbury. Undoubtedly other collections have been made from alpine regions by local and visiting collectors, but few records have been published.

During excursions in the Southern Alps over the 1965/66 summer (Fineran, 1966), lichens were collected on three occasions. The specimens were from alpine habitats between 3,600 and 8,330 feet and were sent to C. W. Dodge for identification. Seven new species have been described from the material (Dodge, in press). This paper presents a complete record of the collections including information on locality and habitat.

LOCALITIES AND HABITATS

The present material was collected in the South Island, Canterbury, from the Two Thumbs, 19 February 1966; Phipps Peak, 5 March 1966; and the Tasman valley, 8 April 1966.

The Two Thumbs is the highest peak on the Two Thumbs range, which lies between the watersheds of the upper Rangitata and Godley

ivers. Access to the peak was through Mesopotamia station, in the Rangitata, and the headwaters of Black Birch creek. The collection was made about the summits of the high and low peaks and along the ridge which runs east from the low peak and separates the upper tributaries of Black Birch creek. The height of the High Thumb is given as 8,338 feet (New Zealand Four Mile Sheet No. 22, Lands and Survey Department). Other altitudes cited are based on estimates made in the field.

Phipps Peak is situated on the Main Divide between Canterbury and Westland on the northern slopes above Arthurs Pass. The specimens were collected between 5,500 and 6,500 feet on the south face of Phipps Peak, along the Phipps Peak/Mt. Temple ridge, and in the couloir above Temple Basin below the col between the two peaks. The altitudes quoted are based on an inch-to-the-mile contoured map (Lands and Survey Department, Sheet OTIRA S 59).

The material from the Tasman valley, Mt. Cook National Park, was collected on bluffs and rock outcrops immediately behind Ball Hut along the spur which separates the Tasman and Ball glaciers. The altitude of Ball Hut is given as 3,600 feet above sea level (Packard, 1959).

In all localities the lichens grew principally on rock of the greywache type or amongst dirt in crevices and ledges. The lichens were more plentiful on rocks of a southern aspect than on faces exposed to the north. Crustose lichens were predominant and were most abundant on stable rock.

RECORDS

In the following table of records, catalog numbers cited are those of B. A. Fineran, whose material is housed in the herbarium of the University of Canterbury. Duplicates of several specimens are also contained in the herbarium of C. W. Dodge, University of Vermont, U.S.A.

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² Department of Botany, University of Canterbury, Christchurch, New Zealand.

³ Department of Botany, University of Vermont, Burlington, Vermont 05401, U.S.A.

TABLE OF RECORDS

SPECIES	PHIPPS PEAK			THE TWO THUMBS			BALL HUT	
	CATALOG NUMBER	HABITAT	ALTITUDE	CATALOG NUMBER	HABITAT	ALTITUDE	CATALOG NUMBER	HABITAT
<i>Agyrophora zablbruckneri</i> (Frey.) Llano.				3039	oR	7,500	2313	Rr
				3048	sR	7,500	2316	eR
				3079	sR	7,500		
<i>Arthopyrenia macquariensis</i> Dodge	2260a	dL						
<i>Aspicilia novae-zelandiae</i> (Magn.) Dodge	2251	Ror	6,200				2325	Ror
	2255	Rr	6,100				2326	Ror
							2328	Ror
<i>Bacidia albicerata</i> (Kremp.) Zahlbr.				3041	sR	7,500		
<i>Buellia atroflavella</i> (Nyl.) Müll. Arg.				3057	eR	7,500		
<i>B. dunedina</i> Zahlbr.				3076	eR	8,000		
<i>B. exsoluta</i> (Nyl.) Müll. Arg.	2280	Rs	6,500					
<i>B. fuscoatrula</i> Zahlbr.	2235	Rs	6,260					
<i>B. mawsonii</i> Dodge				3032	sbRs	8,338		
<i>B. otagensis</i> Zahlbr.				3032	sbRs	8,338		
<i>Candelariella neozelandica</i> Dodge							2310	Ror
							2311	Ror
							2326	Ror
							2328	Ror
							2329	Ror
							2330	Ror
							2301	Rr
<i>Catillaria rudolphi</i> Dodge				3030	sbRs	8,338		
				3057	eR	7,500		
<i>Chiodecton acarosporoides</i> Dodge	2232	R	6,200	3029	sbRs	8,338		
				3063	eR	8,000		
<i>C. macquariense</i> Dodge				3047	eR	7,500		
				3057	eR	8,100		
<i>Cladonia enantia</i> Nyl.	2211	dL	6,000					
<i>C. fimbriata</i> v. <i>simplex</i> (Weis.) Fw.				3044	Rc	8,100		
<i>C. gracilis</i> v. <i>campbelliana</i> Vainio	2260	dL	6,200					
<i>C. pyxidata</i> v. <i>neglecta</i> (Flke.) Mass.	2245	dL	6,000	3053	Rc	7,500		
<i>Dermatocarpon</i> (<i>Catopyrenium</i>) <i>insigne</i> Zahlbr.				3043	Rr	7,500		

TABLE OF RECORDS (*continued*)

SPECIES	PHIPPS PEAK			THE TWO THUMBS			BALL HUT	
	CATALOG NUMBER	HABITAT	ALTITUDE	CATALOG NUMBER	HABITAT	ALTITUDE	CATALOG NUMBER	HABITAT
<i>Glyphis neozelandica</i> Dodge	2267	Rr	6,000					
<i>Hypogymnia sublugubris</i> Dodge	2247	dL	6,000				2310	Ror
<i>Lecania johnstoni</i> Dodge				3051	Rc	7,500		
<i>Lecanidium adveniens</i> (Nyl.) Dodge	2257a	Rr	6,200					
<i>L. thomsonianum</i> (Zahlbr.) Dodge	2274	Rs	6,500					
<i>Lecanora brownii</i> Dodge				3034	sbRs	8,338		
<i>L. pachypholis</i> Nyl.	2200	oR	6,200					
<i>L. pulvinaris</i> Zahlbr.				3036	sbRs	8,338		
<i>L. trachyderma</i> Krmplhbr.				3057	eR	7,500		
<i>Lecidea</i> (<i>Biatora</i>) <i>allanii</i> Zahlbr.	2276	Rs	6,500	3074	eR	8,000		
<i>L. (Eulecidea) atrofuscula</i> Dodge	2243	Rs	6,200	3029	sbRs	8,338		
	2257	Rr	6,200	3034	sbRs	8,338		
	2268a	Rr	6,200	3043	Rr	7,500		
	2270	Rr	6,000	3059	eR	8,000		
	2277	Rs	6,500					
<i>L. (Eulecidea) atromorio</i> Knight							2315	ds
<i>L. (Eulecidea) chalybeiza</i> Nyl.				3028	sbRs	8,338		
				3029a	sbRs	8,338		
				3036	sbRs	8,338		
<i>L. (Eulecidea) dunedina</i> Zahlbr.	2216	Rr	6,200				2329	Ror
	2263	Rs	6,000					
	2275	Rs	6,500					
	2278	Rs	6,500					
	2279	Rs	6,500					
<i>L. (Eulecidea) friabilis</i> Zahlbr.							2310	Ror
							2328	Ror
							2330	Ror
<i>L. (Eulecidea) fuscoatrula</i> Nyl.				3030	sbRs	8,338	2313	Ror
<i>L. (Eulecidea) leptocarpa</i> Nyl.	2213	R	6,200	3030	sbRs	8,338	2330	Ror
	2239	R	6,200					
	2253	uR	6,200					
	2273	Rs	6,500					

TABLE OF RECORDS (*continued*)

SPECIES	PHIPPS PEAK			THE TWO THUMBS			BALL HUT	
	CATALOG NUMBER	HABITAT	ALTITUDE	CATALOG NUMBER	HABITAT	ALTITUDE	CATALOG NUMBER	HABITAT
<i>L. (Eulecidea) macquariensis</i> Dodge	2269	Rr	6,000	3035	sbRs	8,338	2300a 2306 2308 2311	R Ror Ror Ror
<i>L. (Eulecidea) melastroma</i> Nyl.	2212 2254	R Rr	6,200 6,200					
<i>L. (Eulecidea) nigrocinnamomea</i> Dodge	2217 2267 2270	eR Rr Rr	6,260 6,000 6,000					
<i>L. (Eulecidea) schistiseda</i> Zahlbr.				3038	sbRs	8,338	2307 2327	Ror Ror
<i>L. (Biatora) subcoarctata</i> Knight							2320 2321	Rc Rc
<i>L. (Eulecidea) suprasedens</i> Zahlbr.	2278a	Rs	6,500					
<i>L. (Eulecidea) sylvicolella</i> Nyl.				3065	sR	7,500		
<i>L. (Eulecidea) tararuensis</i> Zahlbr.	2214 2215 2228 2281 2283	oR ds R Rs Rs	6,200 6,200 6,250 6,500 6,500	3035 3036 3050	sbRs sbRs eR	8,338 8,338 7,500	2322	Rc
<i>L. (Eulecidea) triangularis</i> Magn.				3031	sbRs	8,338	2310 2326	Ror Ror
<i>L. (Eulecidea) subtenebrosa</i> Nyl.	2240a 2264 2240a	Rr Rr Rr	6,200 6,000 6,000	3030 3041	sbRs oR	8,338 7,500	2307 2325 2326	Ror Ror Ror
<i>Leptogium crispatellum</i> Nyl.				3058	Rc	7,500		
<i>L. (Mallotium) limbatum</i> Wilson	2219 2238	dL dL	5,500 6,000	3062	Rc	8,000		
<i>L. stangeri</i> Dodge				3049	Rc	8,000		
<i>Leptotrema neozelandicum</i> Dodge				3065	sR	7,500		
<i>Melampyrium amphorea</i> Stirton							2312	Ror
<i>Microthelia macquariensis</i> Dodge	2256	Rr	6,200	3035	sbRs	8,338		

TABLE OF RECORDS (*continued*)

SPECIES	PHIPPS PEAK			THE TWO THUMBS			BALL HUT	
	CATALOG NUMBER	HABITAT	ALTITUDE	CATALOG NUMBER	HABITAT	ALTITUDE	CATALOG NUMBER	HABITAT
<i>Omphalodiscus finerani</i> Dodge				3073	oR	7,500		
<i>O. subaprinus</i> (Frey.) Llano				3067	sR	7,500	2308	Ror
				3078	oR	7,500	2312	Ror
							2313a	Ror
<i>Pannaria immixta</i> Nyl.	2220	Rr	6,250					
	2271	Rs	6,250					
<i>P. pannarina</i> (Nyl.) Magn.							2317	Rc
<i>P. periptera</i> Knight	2234	R	6,200	3056	Rc	8,000		
	2272	Rf	6,000					
<i>P. perfossa</i> Stirton	2259	Rr	6,200	3052	sR	7,500		
<i>P. prolificans</i> Vainio	2221	R	6,200	3070	sR	7,500		
<i>P. subimmixta</i> Knight	2236	R	6,000	3066	Rc	7,500		
	2262	Rf	6,000					
<i>Parmelia</i> (<i>Melanoparmelia</i>) <i>adpicta</i> Zahlbr.	2217	Rr	6,260				2311	Ror
							2325	Ror
							2326	Ror
<i>P.</i> (<i>Melanoparmelia</i>) <i>epheboides</i> Zahlbr.				3026	sbRs	8,338		
				3033	sbRs	8,338		
				3045	eR			
<i>P.</i> (<i>Hypotrachyna</i>) <i>macquariensis</i> Dodge							2318 (?)	Rc
<i>P.</i> (<i>Melanoparmelia</i>) <i>otagensis</i> Zahlbr.							2327	Ror
							2330	Ror
<i>P.</i> (<i>Hypotrachyna</i>) <i>tenuirima</i> v. <i>erimus</i> Nyl.				3043	Rr	7,500		
<i>Parmeliella variegata</i> (Stirton) Müll. Arg.	2233	R	6,200					
<i>Perforaria tyloplaca</i> Nyl.	2210 (?)	Rc	6,000					
<i>Pertusaria perrimosa</i> Nyl.	2201	R	6,200					
<i>P. graphica</i> Knight	2230	R	6,200					
	2231	R	6,200					
<i>Pertusaria</i> sp.	2217	Rr	6,260					
	2223	Rr	6,200					

TABLE OF RECORDS (continued)

SPECIES	PHIPPS PEAK			THE TWO THUMBS			BALL HUT	
	CATALOG NUMBER	HABITAT	ALTITUDE	CATALOG NUMBER	HABITAT	ALTITUDE	CATALOG NUMBER	HABITAT
<i>Physcia alboplumbea</i> (Taylor) Nyl.							2304 (?) 2311	Ror Ror
<i>P. obscuriuscula</i> Nyl.				3042 (?)	Rc	7,500		
<i>P. regalis</i> Zahlbr.							2300	R
<i>Placopsis alboblacoides</i> Lamb.	2239	Rr	6,200					
<i>P. lateritioides</i> Lamb.	2207	Rr	6,000	3054	eR	8,000		
	2222	Rr	6,200	3060	eR	8,000		
	2227	R	6,200					
	2242	R	6,200					
<i>P. perrugosa</i> Nyl.	2281	Rs	6,500	3043	Rr	7,500	2302	Ror
				3057	eR	7,500	2303	Ror
				3072	eR	7,500	2305	Ror
				3075	eR	8,000	2309	Ror
				3080	eR	7,500	2323	eR
							2324	eR
<i>P. perrugosa</i> v. <i>neglecta</i> (Knight) Dodge	2240	Rr	6,200					
	2256	Rr	6,200					
	2257	Rr	6,200					
<i>Pseudohyppia</i> sp. ?	2256	Rr	6,200					
<i>Psoroma beatum</i> (Hue) Zahlbr.	2224	R	6,200	3071	Rc	7,500		
	2286	ds	5,500					
<i>P. campbellianum</i> Hue				3055	Rc	8,000		
				3069	Rc	8,000		
<i>P. coralloideum</i> Nyl.							2319	dRc
<i>P. versicolor</i> (Hook. f. & Tayl.) Müll. Arg.	2261	ds	6,000					
<i>Pyxine neozelandica</i> Dodge	2276	Rs	6,500					
<i>Rhizocarpon lunulatum</i> Zahlbr.	2231	R	6,200				2312	Ror
	2232	R	6,200					

TABLE OF RECORDS (*continued*)

SPECIES	PHIPPS PEAK			THE TWO THUMBS			BALL HUT	
	CATALOG NUMBER	HABITAT	ALTITUDE	CATALOG NUMBER	HABITAT	ALTITUDE	CATALOG NUMBER	HABITAT
<i>R. neozelandicum</i> Räs.	2216	Rr	6,200	3027	sbRs	8,338	2300a	R
	2217	Rr	6,260	3030	sbRs	8,338	2307	Ror
	2235	Rs	6,500	3034	sbRs	8,338	2308	Ror
	2254	Rr	6,200	3037	sbRs	8,338	2310	Ror
	2265	Rr	6,000	3068	eR	8,000	2313	Ror
	2266	Rr	6,000	3095	sbRs	8,338	2317	Rc
	2275	Rs	6,500				2323	eR
	2278	Rs	6,500				2325	Ror
	2280	Rs	6,500				2326	Ror
							2329	Ror
							2330	Ror
<i>R. thomsoni</i> Zahlbr.	2278a	Rs	6,500					
<i>Siphula decumbens</i> Nyl.				3040	oR	7,500		
<i>S. roccelliformis</i> Nyl.	2208	dRc	6,000					
<i>Siphulina neozelandica</i> Dodge	2237	Rc	6,000					
<i>Sporostatia epiphysa</i> (Stirton) Dodge	2268	Rr	6,000	3034	sbRs	8,338		
<i>S. desmospora</i> (Knight) Dodge	2270	Rr	6,000					
<i>S. nigra</i> Dodge				3077	eR	8,000		
<i>Squamarina allanii</i> (Zahlbr.) Dodge							2304	Ror
<i>S. haysomi</i> Dodge	2241	Rr	6,200					
	2249	Rf	6,000					
<i>Stereocaulon argodes</i> Nyl.	2248	oR	6,000					
<i>S. corticatum</i> Nyl.	2226	R	6,200					
	2229	R	6,200					
	2258	Rr	6,200					
<i>Thelotrema periphysatum</i> Zahlbr.	2244	Rr	6,200					
<i>Usnea</i> (<i>Neuropogon</i>) <i>ciliata</i> (Nyl.) Du Rietz				3046	oR	7,500		
<i>Verrucaria adguttata</i> Zahlbr.	2200	uR	6,200				2320	Rc
<i>V. aucklandica</i> Zahlbr.	2209	R	6,250					
<i>V. submargacea</i> Knight				3057	eR	7,500		

A question mark in parentheses after a number denotes that the specimen is questionably assigned to the species indicated. Altitudes are given in feet above sea level. The following abbreviations are used in the table:

dL	Dirt filled ledge
dRc	Dirt filled rock crevice
ds	Damp site on rock face or dirt filled crevice
eR	Exposed rock
oR	Underside of overhanging rock
R	Rock
Rc	Rock crevice
Rf	Rock slabs on face of peak
Ror	Rock outcrop on ridge
Rr	Rock on ridge
Rs	Rock at summit
sbRs	Stable broken rock at summit
sR	Sheltered rock
uR	Underside of rock

SUMMARY

Lichens collected between 3,600 and 8,330 feet from three localities in the Southern Alps, South Island, New Zealand, are recorded. All species listed are represented by specimens in the herbarium of the University of Canterbury, Christchurch, New Zealand.

Identifications of the collections were supported by grants GA-266 and GA-736 from the National Science Foundation, U.S.A., to C. W. Dodge.

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